Mr. Michael T. Davis Pre-Calculus	2.2 Solving Equations using Factoring (1) November 28, 2016

Name: Solutions

Solving Equations with a Trinomial with $a \neq 1$

1. Solve $3x^2 - 11x - 4 = 0$ $(3x+1)(x-4)=0$

$\left\{-\frac{1}{3}, 4\right\}$

2. Solve $5y^2 + 12y + 7 = 0$ $(5y+7)(y+1)=0$

$\left\{-\frac{7}{5}, -1\right\}$

Solving Equations with a Binomial that is a Difference of Squares

3. Solve $x^2 - 25 = 0$ $(x-5)(x+5)=0$

$\{5, -5\}$

4. Solve $9k^2 - 49 = 0$ $(3k-7)(3k+7)=0$

$\left\{\frac{7}{3}, -\frac{7}{3}\right\}$

Solving Equations with a Trinomial that is a Binomial Squared

5. Solve $p^2 - 20p + 100 = 0$ $(p-10)(p-10)=0$

$\{10\}$

6. Solve $4w^2 + 20w + 25 = 0$ $(2w+5)(2w+5)=0$

$\left\{-\frac{5}{2}\right\}$

Solving Equations with a Binomial that is a Difference of Cubes or a Sum of Cubes

7. Solve $m^3 - 27 = 0$

$(m-3)(m^2+3m+9)=0$

$\{3\}$

8. Solve $8k^3 + 27 = 0$

$(2k+3)(4k^2-6k+9)=0$

$\left\{-\frac{3}{2}\right\}$

Solving Equations with a Binomial with a Common Factor

9. Solve $8x^2 - 24x = 0$

$8x(x-3)=0$

$\{0, 3\}$

10. Solve $5m^3 - 45m = 0$

$5m(m-3)(m+3)=0$

$\{0, 3, -3\}$

Solving Equations with a Trinomial with a Common Factor

11. Solve $2x^2 + 10x + 12 = 0$

$2(x+2)(x+3)=0$

$\{-2, -3\}$

12. Solve $3y^3 + 6y^2 - 45y = 0$

$3y(y+5)(y-3)=0$

$\{0, -5, 3\}$

Solving Equations with a Polynomial that Factors by Grouping

13. Solve $x^3+5x^2+4x+20=0$

$(x^2+4)(x+5)=0$

$\{-5\}$

14. Solve $y^3+2y^2-9y-18=0$

$(y-3)(y+3)(y+2)=0$

$\{3,-3,-2\}$

Solving Equations that have "Quadratic Form" but are not Quadratic Functions

15. Solve $p^4-5p^2+4=0$

$(p-1)(p+1)(p-2)(p+2)=0$

$\{1,-1,2,-2\}$

16. Solve $z^4-13z^2+36=0$

$(z-2)(z+2)(z-3)(z+3)=0$

$\{2,-2,3,-3\}$